

Hi-Fi AV Surround Amplifier

MODEL AVC-1530/1530G

AV SURROUND AMPLIFIER



(Photo: AVC-1530)

NIPPON COLUMBIA CO., LTD.


SPECIFICATIONS

● Audio Section (Power amplifier) Rated output: (All properties shown are only for the power amplifier stage.) Output terminals: Line input (Each line input – FRONT SP OUT) Input sensitivity / impedance: Frequency response: Tone control range: Signal-to-noise ratio Phono equalizer (PHONO input – REC OUT) RIAA deviation: Signal-to-noise ratio: Rated output / Maximum output: Distortion factor:	for U.K. model		for multi voltage model
	Front (main 2ch driven)		Front
	70 W + 70 W (8 ohms, 20 Hz – 20 kHz with 0.1% THD)		90 W + 90 W (6 ohms, EIAJ)
	CENTER (center 1ch driven)		Center
	70 W (8 ohms, 20 Hz – 20 kHz with 0.1% THD)		90 W (6 ohms, EIAJ)
	REAR (rear 2ch driven)		Rear
	20 W + 20 W (8 ohms, 1 kHz with 0.5% THD)		25 W + 25 W (6 ohms, EIAJ)
	Front: 6 to 16 ohms		
	Center: 6 to 16 ohms		
	Rear: 6 to 16 ohms		
● Video Section			
Standard video jacks			
Input and output level / impedance: 1 Vp-p / 75 ohms			
Frequency response: 3 Hz to 8 MHz ±3 dB			
S-Video output jacks			
Input and output level / impedance:			
Y (brightness) signal: 1Vp-p / 75 ohms			
C (color) signal: 0.286 Vp-p / 75 ohms			
Frequency response: 3 Hz to 8 MHz ±3 dB			
● General			
Power supply: AC 240 V, 50 Hz (for U.K. model)			
AC 110/220 V, 50/60 Hz (for multi-voltage model)			
Power consumption: 230 W (for U.K. model)			
210 W (for multi-voltage model)			
Maximum external dimensions: 434 (W) × 142 (H) × 337 (D) mm (17-3/32" × 5-19/32" × 13-17/64") (AVC-1530)			
470 (W) × 143 (H) × 337 (D) mm (18-1/2" × 5-5/8" × 13-17/64") (AVC-1530G)			
Weight: 9.6 kg (21 lbs 3 oz) (AVC-1530) 10.4 kg (22 lbs 15 oz) (AVC-1530G)			
● Remote control unit			
System remote control			
RC-167:			
Total buttons: 41			
DENON system code			
Tuner: 2 buttons			
CD player: 6 buttons			
Cassette deck: 6 buttons			
AVC-1530/1530G fixed codes: 27 buttons			
Batteries: R6P/AA Type (two batteries)			
External dimensions: 60 (W) × 175 (H) × 18 (D) mm			
Weight: 120 g (Approx. 4 oz) (including batteries)			


* For purposes of improvement, specifications and design are subject to change without notice.

1 INTRODUCTION

SAFETY PRECAUTIONS



CAUTION
 RISK OF ELECTRIC SHOCK
 DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION

POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

• FOR UNITED KINGDOM MODEL ONLY

CONNECTING THE MAINS PLUG:

This unit operates from a 240V ac 50 Hz mains supply.

Fit a proper mains plug to the mains lead of this equipment. If a 13 amp (BS1363) plug is used, a 5 amp fuse must be fitted. The 13 amp fuse supplied in a new plug must NOT be used. If any other type of plug is used, a 5 amp fuse must be fitted either in the plug or adaptor or at the distribution board.


IMPORTANT

The wires in the mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

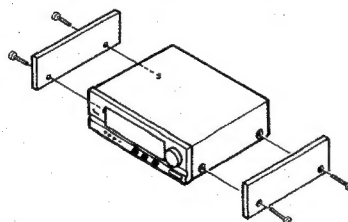
As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured red.

DO NOT MAKE ANY CONNECTION TO THE LARGER PIN MARKED WITH THE LETTER E OR BY THE SYMBOL  OR COLOURED GREEN OR GREEN-AND-YELLOW.

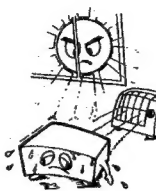
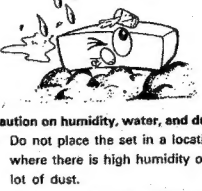
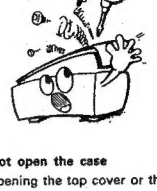

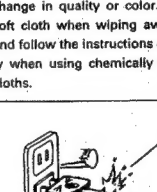
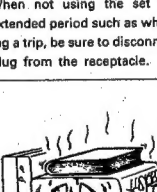
Disconnect the mains plug from the supply socket when not in use.

For models with wood sides: (AVC-1530G ONLY)



If the wood sides are removed, the top cabinet cannot be reinstalled using the same screws. Consult your store of purchase or a DENON Overseas Service Center.

NOTE ON USE

 <p>Be careful of high temperatures</p> <ul style="list-style-type: none"> Do not place the set in a location where it will be exposed to direct sunlight or near a heating appliance. <p>Caution on rack/cabinet installation</p> <ul style="list-style-type: none"> Avoid installing the set in a closed-type rack. When installing in a rack or cabinet, provide a sufficiently large ventilation opening to promote heat radiation. 	 <p>Caution on humidity, water, and dust</p> <ul style="list-style-type: none"> Do not place the set in a location where there is high humidity or a lot of dust. <p>Flower vases or other items containing water should not be placed on top of the set.</p> <p>Care of the case</p> <ul style="list-style-type: none"> Avoid the use of pesticides near the set as well as wiping the case with benzine, thinner or other solvents since they may cause a change in quality or color. Use a soft cloth when wiping away dirt and follow the instructions carefully when using chemically treated cloths. 	 <p>Do not open the case</p> <ul style="list-style-type: none"> Opening the top cover or the bottom plate of the case and inserting your hand is dangerous. Do not open the case. <p>If some trouble arises with the performance of the set, remove the power plug soon and contact the store where the set was purchased or a nearby dealer.</p>
 <p>Do not allow foreign matter into the equipment</p> <ul style="list-style-type: none"> Be especially careful of needles, hair pins, and coins getting into the set. 	 <p>Care with the power cord</p> <ul style="list-style-type: none"> When removing the plug from the receptacle, do not pull the power cord; be sure to hold the plug when removing it. 	 <p>During your absence</p> <ul style="list-style-type: none"> When not using the set for an extended period such as when taking a trip, be sure to disconnect the plug from the receptacle. <p>For sets with ventilation holes</p> <p>Do not block the ventilation holes of the set</p> <ul style="list-style-type: none"> Blocking the ventilation holes will lead to damage of the set. The ventilation holes are very important for heat radiation from within the set. Care must be taken since placing an object against the holes will result in an extreme rise of temperature within the set.

- We greatly appreciate your purchase of the AVC-1530/1530G.
- To be sure you take maximum advantage of all the features the AVC-1530/1530G has to offer, read these instructions carefully and use the set properly. Be sure to keep this manual for future reference should any questions or problems arise.

ACCESSORIES

Check that the following parts are included in addition to the main unit:

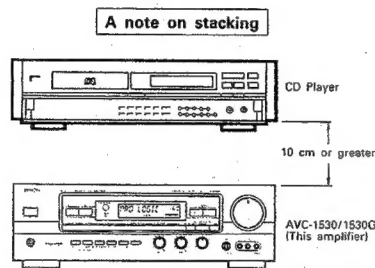
① Operating instructions	1
② AC Plug Adapter (for multi voltage model only)	1
③ Remote control unit (RC-167)	1
④ R6P/AA batteries	2

INSTALLATION PRECAUTIONS

Using this amplifier or other electronic equipment containing microprocessors simultaneously with a tuner or TV may result in noise in the sound or picture.

If this should happen, take the following steps:

- Install the amplifier as far as possible from the tuner or TV set.
- Keep the antenna lines of the tuner or TV as far as possible from the amplifier's power cord and connection cables.
- This problem is especially frequent when using indoor antennas or 300 ohm feeder lines. We recommend using outdoor antennas and 75 ohm coaxial cables.

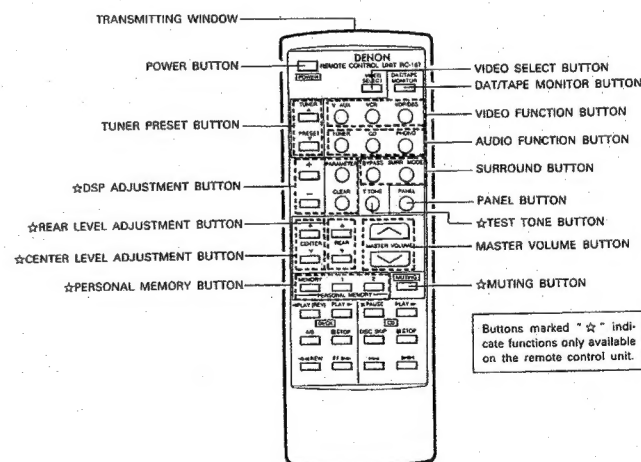
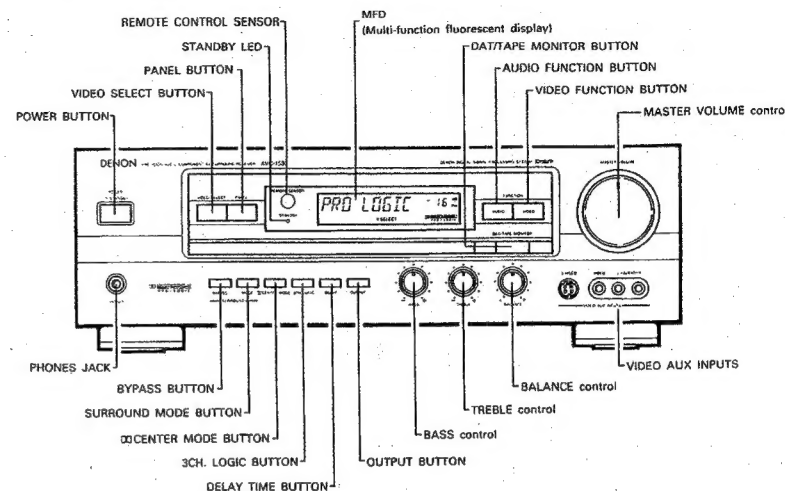


For cooling purposes, do not place another AV component directly on top of the amplifier. Be sure to leave a space of at least 10 cm.

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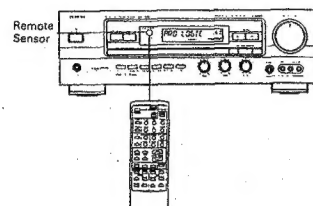
NAMES OF PARTS - 1 (Front Panel and Remote Control Unit)



3 REMOTE CONTROL UNIT

Following the procedure outlined below, insert the batteries before using the remote control unit.

Range of operation of the remote control unit



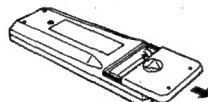
Point the remote control unit at the remote control sensor as shown on the diagram at the left.

NOTES:

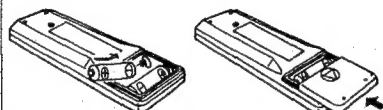
- The remote control unit can be used from a straight distance of approximately 7 meters, but this distance will shorten or operation will become difficult if there are obstacles between the remote control unit and the remote control sensor, if the remote control sensor is exposed to direct sunlight or other strong light, or if operated from an angle.
- Neon signs or other devices emitting pulse-type noise nearby may result in malfunction, so keep the set as far away from such devices as possible.

Inserting the batteries

- Open the bottom cover of the remote control unit and remove the battery cover.



- Insert the two R6P/AA or UM-3 batteries, matching the ⊕ and ⊖ marks on the batteries with those in the case. Close the bottom cover until it clicks shut.



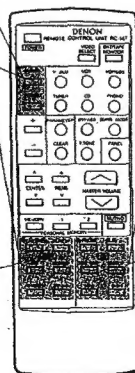
System codes

The system codes for DENON tape decks, CD players and tuners are set in this remote control unit.

Tuner system buttons
 ▲ : Preset channel up
 ▼ : Preset channel down

Tape deck system buttons
 These buttons can be used to operate DENON remote controllable components. For details, refer to the component's operating instructions. Note that operation may not be possible for some models.

▶ : Forward play
 ◀ : Reverse play
 ■ : Stop
 ◀◀ : Rewind
 ▶▶ : Fast-forward
 A/B : Switching between decks A and B for double decks



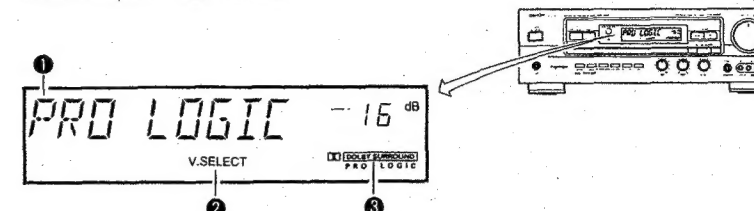
CD system buttons
 These buttons can be used to operate DENON remote controllable components. For details, refer to the component's operating instructions. Note that operation may not be possible for some models.

▶ : Play
 ■ : Pause
 ■ : Stop
 [44] and [▶▶] : Auto search (reverse and forward)
 [DISC SKIP] : CD changer, disc skip

4 MULTI FUNCTION DISPLAY (MFD)

The MFD indicates the operating modes when operations are performed and when PANEL button is pressed.

FLD (Fluorescent Light Display)



1 MULTI FUNCTION DISPLAY

This displays a maximum of 9 characters. Normally the reception frequency is displayed when the function is set to tuner, and the surround mode is displayed when the function is set to other positions. The display also indicates various other information according to the buttons pressed.

2 V. SELECT (VIDEO INPUT SELECT Indicator)

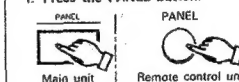
This indicator lights when the video monitor output is fixed in the video input select mode.

3 DOLBY SURROUND Indicator

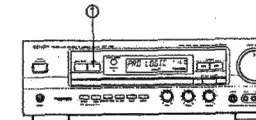
This indicator lights when DOLBY PRO LOGIC is selected by pressing the SURROUND MODE button.

To check the settings of the different modes:

- Press the PANEL button.



Either hold the PANEL button in or press it repeatedly to display the settings for the different modes.



FLD OFF

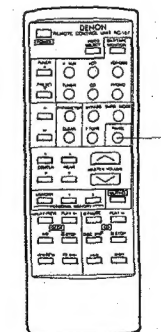
Turning the FLD off:

- Press and hold in the PANEL button.

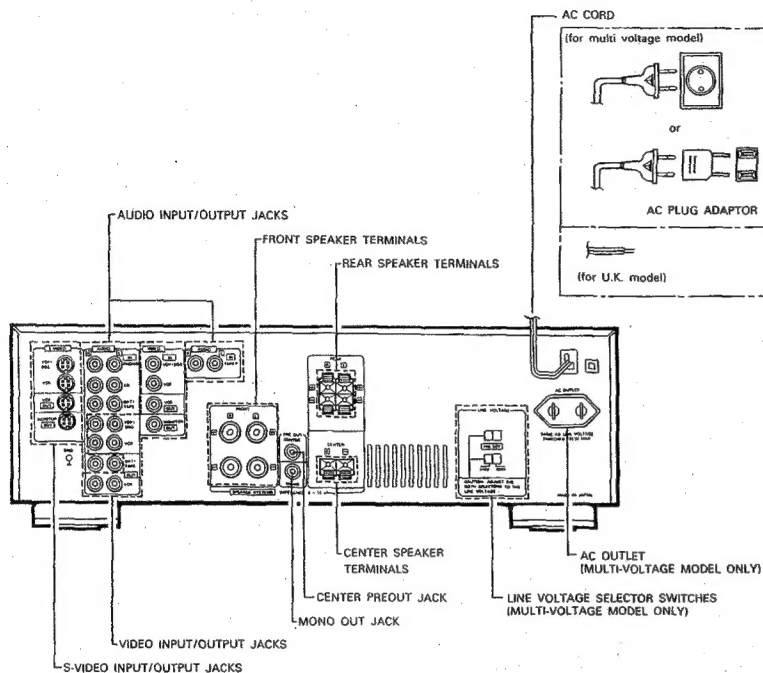
The FLD display changes continuously and finally turns off. Now when a button is pressed, the related display appears for a few seconds then turns off automatically.

- Turning the FLD back on:

Press the PANEL button once again.



5 NAMES OF PARTS - 2 (Rear Panel)



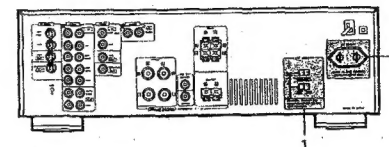
6 CONNECTIONS

→ Continued

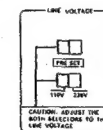
- Always turn off the power of the various components when making connections. Also refer to the operating instructions for the other components.
- Do not plug in the power cord until all connections are completed.

■ MULTI-VOLTAGE MODEL ONLY

Make the following settings before connecting the components.

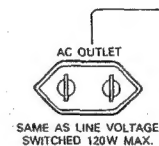


1. Setting the line voltage



- The customer can set the VOLTAGE SELECTORS on the back panel for appropriate line voltage by using a screwdriver.
- Do not use excessive force in setting the VOLTAGE SELECTOR KNOB - you may damage it.
- If the VOLTAGE SELECTOR KNOB does not turn smoothly, contact your store of purchase.
- Be sure to set both voltage selectors to same position.

2. AC OUTLET



Connecting the AC OUTLET

AC OUTLET

• SWITCHED

This AC outlet is controlled by the power switch and Remote Control Unit.
Maximum capacity is 120 W.

NOTE:

Only use the AC outlet for audio equipment. Never use them for hair driers, TVs or other electrical appliances.

Speaker System Connections

- This amplifier can accommodate connections of a total of five speakers including one set of front speakers, one set of rear speakers, and one center speaker.
- Connect the speaker terminals with the speakers making sure that like polarities are matched (+ with +, - with -). Mismatching of polarities will result in weak central sound, unclear orientation of the various instruments, and the sense of direction of the stereo being impaired.

Preparing the cord

1. Peel off the sheath.



2. Twist the wires.

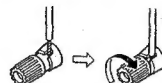


Connecting the front speaker terminals

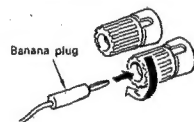
1. Loosen by turning counterclockwise.



2. Insert the cord and tighten by turning clockwise.



Connecting banana plugs

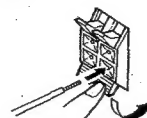


Turn clockwise to tighten, then insert the banana plug.

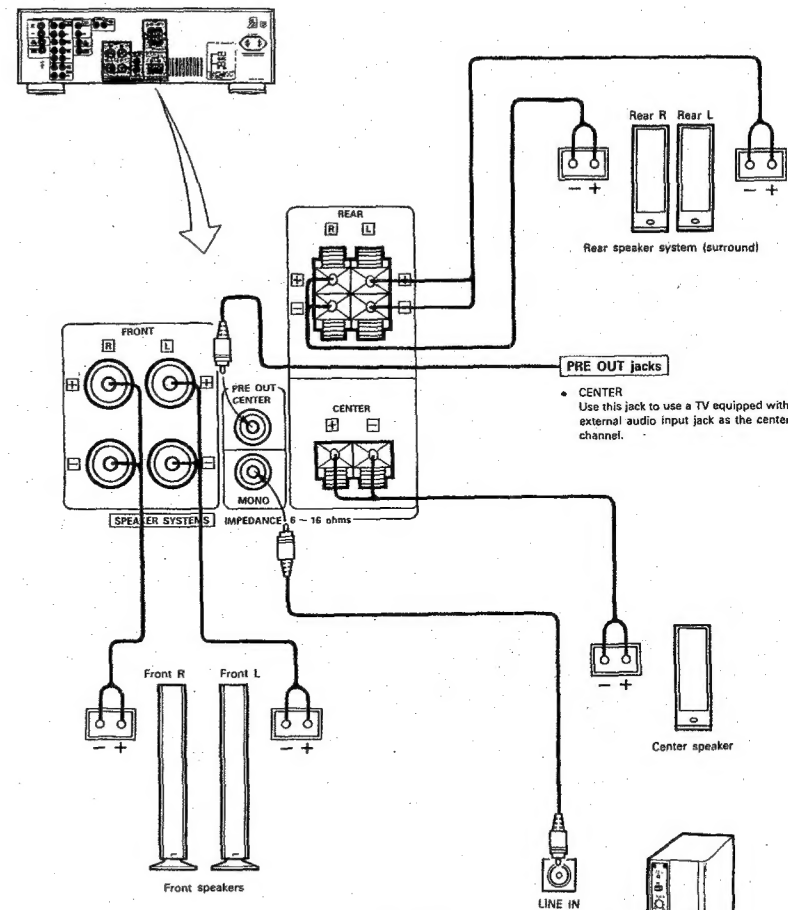
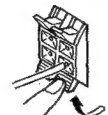
- When making connections, take care that none of the individual conductors of the speaker cord come in contact with adjacent terminals, with other speaker cord conductors, or with the rear panel.
- **Speaker impedance**
 - Speakers with an impedance of 6 to 16 ohms can be connected for use as front, center and rear speakers.
 - Using speakers with an impedance other than the specified one may result in damage. Be sure to use speakers of the specified impedance.

Connecting the center and rear speaker terminals

1. Press the lever.



2. Insert the cord and release the lever.



Precautions when connecting speakers

If a speaker is placed near a TV or video monitor, the colors on the screen may be disturbed by the speaker's magnetism. If this should happen, move the speaker away to a position where it does not have this effect.

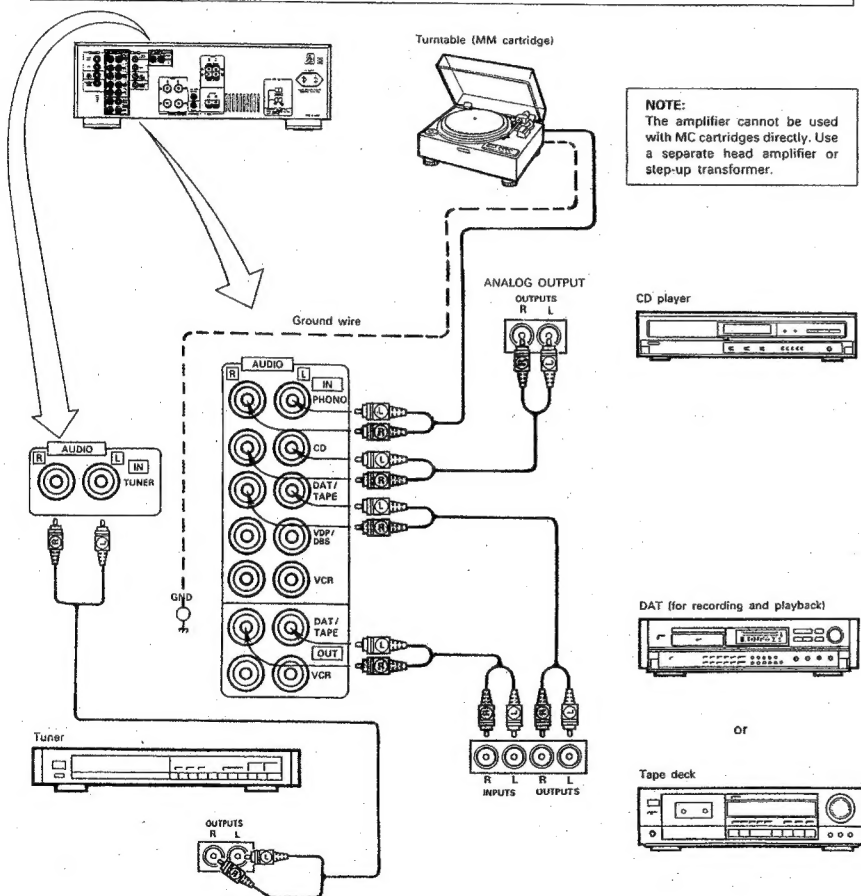
Connection jack for sub-woofer with built-in amplifier (super woofer), etc.

→ Continued

Audio Section

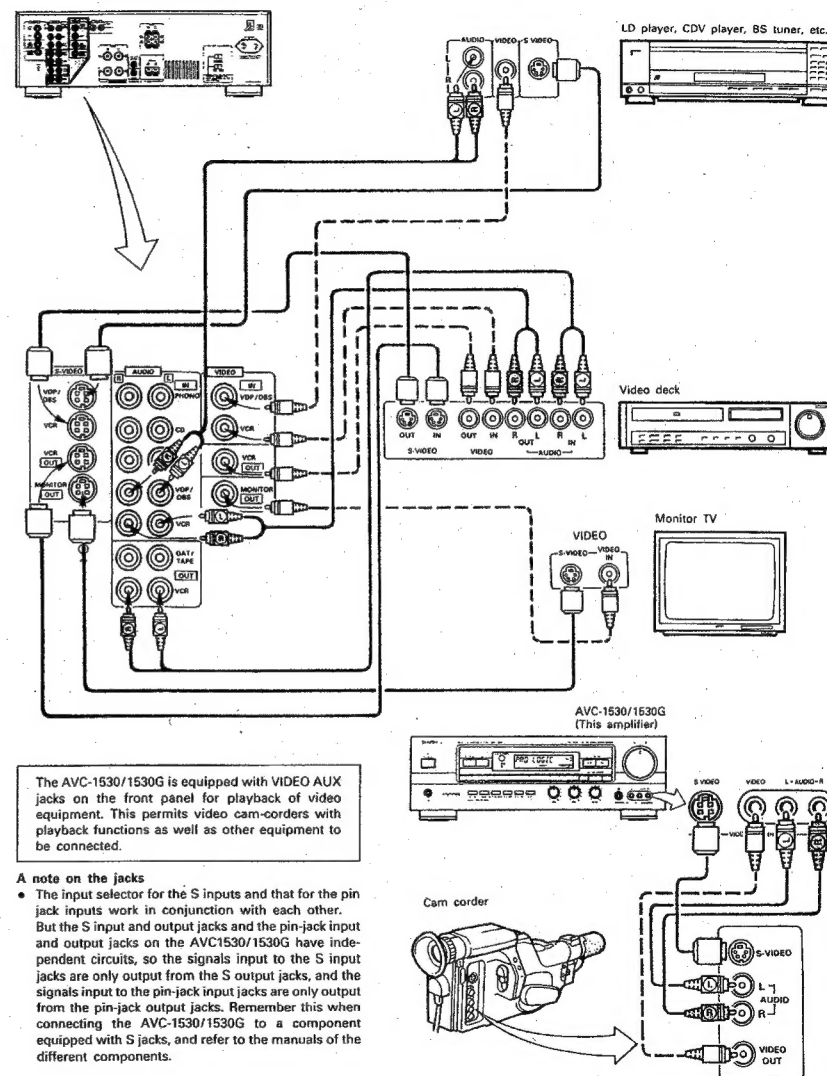
- Do not plug in the power cord until all connections have been completed.
- Be sure to connect the left and right channels properly (left with left, right with right).
- Insert the plugs securely. Incomplete connections will result in the generation of noise.
- Note that binding pin plug cords together with power cords or placing them near a power transformer will result in the introduction of hum or other noise.

- If hum or other noise is produced when the ground wire is connected, disconnect it.
- Noise or humming may be generated if a connected component is used independently without turning the power of the AVC-1530/1530G on. If this happens, turn on the power of the AVC-1530/1530G.



Video Section

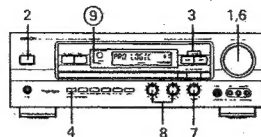
→ Continued



7 PLAYBACK

■ Preparations for Playback

- Check the connections
- Check that all connections are proper, referring to the connections diagrams (pages 9 to 13).



■ Playing the program source (normal stereo playback)

- Set the MASTER VOLUME control to the minimum.



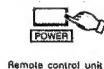
Main unit

- Press the POWER button to turn the power on.

The muting mode is set for several seconds, after which the **STANDBY LED** ② flashes for several seconds.



Main unit



Remote control unit

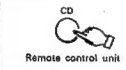
- Select the source to be played.

Audio function button

Example:



Main unit



Remote control unit

PHONO, CD or TUNER can be selected directly.

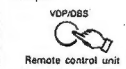
The source switches as shown above MFD.

Video function button

Example:



Main unit



Remote control unit

VDP/DBS, VCR and V-AUX can be selected directly.

The source switches as shown above MFD.

- Press the BYPASS button.



Main unit



Remote control unit

- Start playback of the program source. For instructions, refer to the source's operating instructions.

- Adjust the volume.



Main unit



Remote control unit

Turn the control clockwise to increase the volume, counterclockwise to decrease it.

Press the **[A]** button to increase the volume, the **[V]** button to decrease it.

- Adjust the left/right balance.



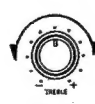
Main unit

Turn the control counterclockwise to reduce the volume of the right channel, clockwise to reduce the volume of the left channel.

- Adjust the tone.



Main unit



Main unit

Turn the control clockwise to increase the bass, counterclockwise to decrease it.

Turn the control clockwise to increase the treble, counterclockwise to decrease it.

NOTE:

The sound may be interrupted if switches are operated during playback. This is because the muting circuit is activated to prevent switching noise.

■ Simulcast playback (playing different video and audio sources simultaneously)

- Follow steps 1 to 3 under "Playing the program source".

- Select the desired video program source.



Main unit

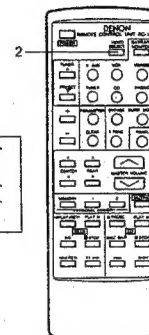
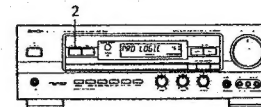


Remote control unit

VDP/DBS
↓
VCR
↓
V-AUX

The source switches as shown above.

- Follow steps 4 to 8 under "Playing the program source".



■ Cancelling simulcast playback

- Press the VIDEO SELECT button again.
- Press the video function button on the main unit or remote control unit.

■ Using the muting function

Use this to turn off the audio output temporarily.

- Press the MUTING button.

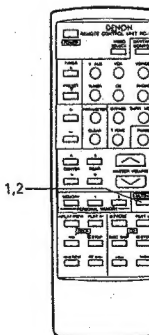
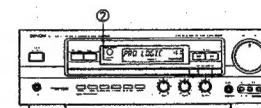


Remote control unit

The **STANDBY LED** ② flashes when the muting function is set.

- Press the MUTING button again.

The muting function is cancelled.



8 RECORDING

■ Recording the program source (recording the source currently being monitored)

- Follow steps 1 to 3 under "Playing the program source".
- Start recording on the tape or video deck.
For instructions, refer to the component's operating instructions.

NOTES:

- The audio signals selected with the audio or video function button are output from the DAT/TAPE REC OUT jacks.
- The recording source switches if the audio function, video function, personal memory "1" or "2" buttons are pressed during recording. Do not press these buttons during recording.

Simultaneous recording

The signals of the source selected with the function selector button are output simultaneously to the DAT/TAPE and VCR REC OUT jacks. If a total of two tape and/or video decks are connected and set to the recording mode, the same source can be recorded simultaneously on both decks. In addition, if the TAPE MONITOR (DAT/TAPE) button is pressed, the audio signals from the tape deck are output to the VCR AUDIO REC OUT jacks.

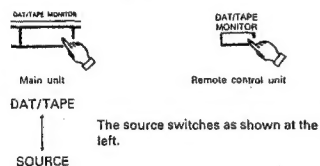
9 TAPE MONITOR FUNCTION

■ When playing a DAT or tape deck

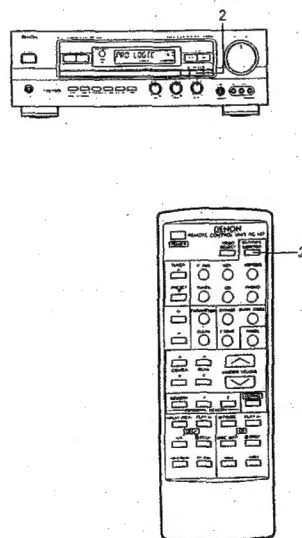
Use this function to switch between the DAT or tape deck and the input (source) selected with the audio or video function buttons.

- Follow steps 1 and 2 under "Playing the program source".

- Select the deck to be played.



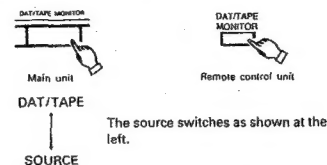
- Follow steps 5 to 8 under "Playing the program source".



■ Monitoring the recording on a three-headed tape deck

The sound actually being recorded can be monitored during recording when a three-headed tape deck is used.

- Select the deck to be monitored.



- Follow steps 1 to 3 under "Playing the program source".

- Start recording on the tape deck. For instructions, refer to the component's operating instructions.

- Press the three-headed tape deck's source/tape button to monitor the recording.

NOTE:

- Also refer to the three-headed tape deck's operating instructions.

10 USING HEADPHONES

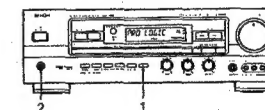
The sound from the speakers can be turned off using the OUTPUT button to listen to the sound over the headphones only, for example at night.

- Press the OUTPUT button.



"H/P ONLY" appears on the MFD.

- Insert the headphones' plug into the PHONES jack.



Cancelling

Either press the OUTPUT button again or press the POWER button to turn the power off.

11 SURROUND PLAYBACK

■ DSP modes

The AVC-1530/1530G is equipped with a DSP (Digital Signal Processor) for the surround processing of digital signals. The DSP lets you enjoy surround sound with a greater sense of reality to match the listening room or software.

• Surround playback using the DSP:

In these mode, signals are output to the center and rear speakers as well for four- or five-channel playback.

The surround modes are as follows:

1	Dolby Pro Logic	Use this when playing program sources recorded in Dolby Surround.
2	Wide Screen	Use this to enjoy program sources with the atmosphere of a movie theater, recorded in Dolby Surround.
3	Live	Use this to enjoy program sources with the atmosphere of a live performance, recorded in Dolby Surround.
4	Mono movie	In this mode, a sense of expansion is added to monaural audio sources. This mode is best suited for playing old movies or movie tapes recorded in monaural.
5	Classic concert	This mode simulates the sound of a large concert hall. It is suited for classical music, etc.
6	Rock concert	This mode is best for playing rock, popular music, etc.
7	Stadium	This mode simulates the sound field of an outdoor stadium.

* These effects may not be very pronounced for some sources.

If this is the case, try other modes, not relying too much on their names, and find the mode you like best.

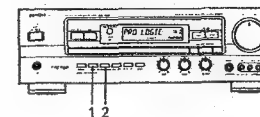
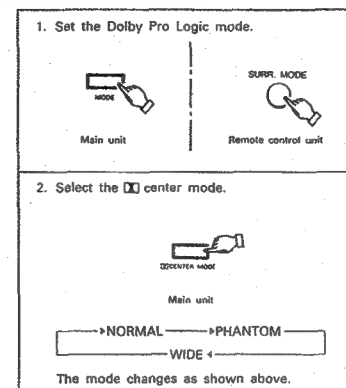
* To adjust the speaker balance for the different surround modes, first adjust for the Dolby Pro Logic Surround mode as explained on page 22, then use the position of the center level and rear level controls at this time as a guide to adjust the balance for that surround mode.

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■ Using Dolby Pro Logic Surround

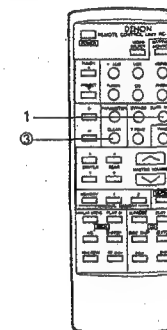
• Speaker disposition and the Dolby Pro Logic Center mode

Ideally, center speakers should be used when playing sources in Dolby Pro Logic Surround. Select the center mode according to your speaker system.

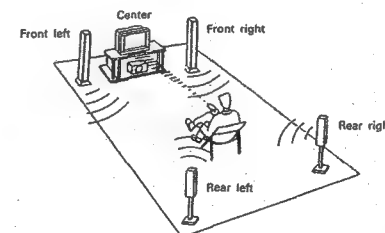


Also select the center mode according to your speaker system when using the Wide Screen and Live modes.

Once the center mode is set, there is no need to readjust it unless you change the speaker system or the listening room. However, when the CLEAR button ③ is pressed, the mode changes as shown on the table on Page 27. In this case, reset the center mode.

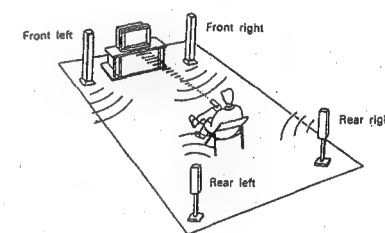


Center Mode



NORMAL mode

Normal mode: This mode is suited for an arrangement in which the center channel speaker is smaller than the left and right speakers. Signals below 100 Hz which have almost no effect on directional orientation are distributed to the left and right channels, whereas the center channel outputs signals greater than 100 Hz. As a result, the bass of the left and right channels increases the apparent deepness of the sound.

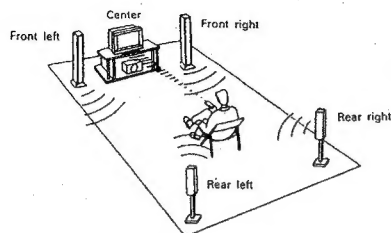


PHANTOM mode

Phantom mode: Use this mode when center channel speaker is not used. A directional emphasis circuit provides signal reproduction which is electrically oriented to the center and this provides an exciting sound field for your enjoyment.

→ Continued

Center Mode







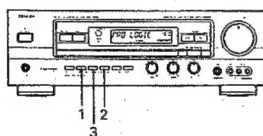
WIDE mode

Wide mode: This mode is suited for an arrangement in which the center channel speaker is of the same grade as the left and right speakers. The entire sound band from low region to high is output to the center channel to provide an exciting sound field for your enjoyment.

• Dolby 3CH. Logic (three-channel logic mode)

Select this mode when not using rear speakers.

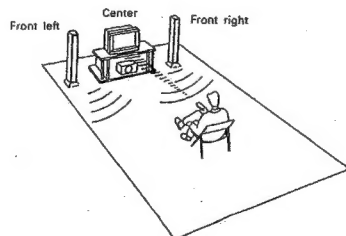
1. Set the Dolby Pro Logic mode.	
 Main unit	 Remote control unit
2. Press the 3CH. LOGIC button.	
 Main unit	
3CH. LOGIC	The mode changes as shown at the left.
PRO LOGIC	
3. Select the center mode according to your speaker system.	
 Main unit	
NORMAL → WIDE	The mode changes as shown above.



NOTE:

The center mode cannot be set to the Phantom mode when the 3CH Logic mode is set.

3CH. LOGIC MODE



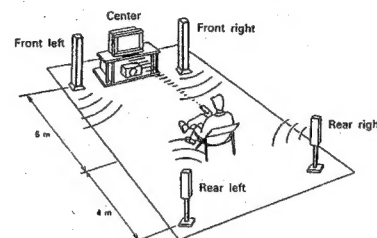
3CH. LOGIC MODE

Three-channel logic mode: Use this mode when rear channel speakers are not used. The rear channel information is reproduced by the front speakers.

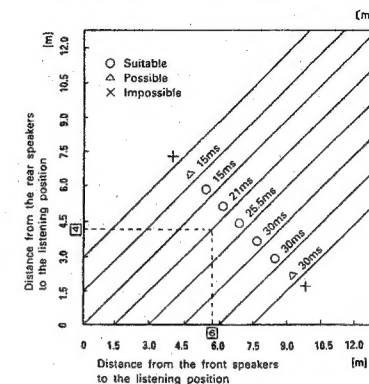
• Setting the delay time





The optimum delay time will differ depending on the listening position. Referring to the chart at right, set the optimum delay time for your room's space and seating position. For example, when the distance from the front speakers to the listening position is 6 m and that from the rear speakers to the listening position is 4 m, the optimum delay time will be 21 ms. The variable range of the delay time differs depending on the mode.

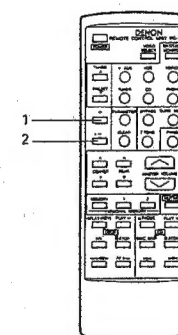
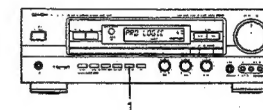
For details about the variable range, see Page 25.



Listening position and optimum delay time for playback with Dolby Pro Logic surround.












1. To increase the delay time:	
 Main unit	 Remote control unit
2. To decrease the delay time:	
 Main unit	 Remote control unit



- The delay time can be set between the range of 15.0ms to 30ms in steps of 1.5ms.
- Once the delay time is set, there is no need to readjust it unless you change the speaker system or the listening room. However, when the CLEAR button is pressed, the mode changes as shown on the table on Page 27. In this case, reset the center mode.

• Speaker volume adjustment and Dolby Pro Logic mode

To obtain the maximum surround effect, use the test tones to adjust the volume and balance of the speakers for the best balance for the listening position and so that the sound from all the speakers is heard at the same level.

Auto mode	Manual mode
<p>1. Press the T.TONE button.</p>  <p>Test tones are produced from the speakers in the order shown below, at 4 second intervals for the first two cycles, 2 second intervals after that.</p> <p>For the Dolby 3CH Logic mode:</p>	<p>6. Switch to the manual mode.</p>  <p>Auto mode → manual mode The mode switches as shown above.</p>
<p>2. To increase the level of the center speakers:</p>  <p>Remote control unit</p>	<p>7. To emit the test tones in the clockwise direction.</p>  <p>Remote control unit</p>
<p>3. To decrease the level of the center speakers:</p>  <p>Remote control unit</p>	<p>8. To emit the test tones in the counterclockwise direction.</p>  <p>Remote control unit</p>
<p>4. To increase the level of the rear speakers:</p>  <p>Remote control unit</p>	<p>9. Follow steps 2 to 5 for the auto mode to adjust the level of the different speakers.</p>
<p>5. To decrease the level of the rear speakers:</p>  <p>Remote control unit</p>	<p>10. Press the T.TONE button again.</p>  <p>Remote control unit</p>

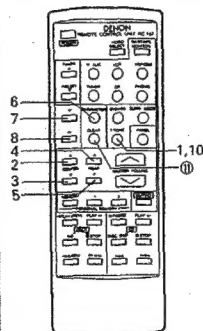
NOTES:

- When the T.TONE button is pressed, the auto mode is set and test tones are produced starting from the front left channel.
- In the auto mode, the test tone will not move on to the next channel when it is being emitted from the center channel and the level of the center speakers is being adjusted, or when it is being emitted from the rear channel and the level of the rear speakers is being adjusted. It only moves on to the next channel approximately two seconds after the level key has been released.
- When the mode is switched from the auto mode to the manual mode, the test tone is emitted starting from the channel from which it was last being emitted in the auto mode.

The level of the center and rear channels can be adjusted from 0dB to -24dB in steps of 2dB.

Once the level of the center and rear channels is set, there is no need to readjust it unless you change the speaker system or the listening room. However, when the CLEAR button is pressed, the mode changes as shown on the table on Page 27. In this case, reset the center mode.

In other surround modes, adjust the balance based on the adjustment made in the Dolby Pro Logic mode. The balance may not be optimum for some sources, so readjust it as necessary.



■ Other DSP Surround Modes

• Using the directivity emphasis circuit and DSP surround

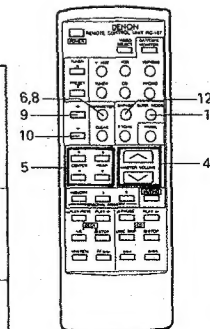
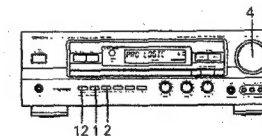
Use this to play sources recorded in Dolby Stereo and Dolby Surround with even greater power. (The directivity emphasis circuit detects the signals with the dominant direction from the level and phase of the left and right channels and produces a sharp acoustic image and sense of direction.)

- When playing movies, set the Wide Screen mode. When playing music, set the Live mode.
- Set the center mode. Set to the center mode set in the Dolby Pro Logic mode.
- Start playing the movie or music.
- Adjust the volume.
- Adjust the level of the center and rear channels. Adjust the levels according to the source, using the Dolby Pro Logic settings as reference.
- Select the delay time mode.
- Set the delay time following the procedure on Page 21.

- When playing movies, set the Wide Screen mode. When playing music, set the Live mode.
- Set the center mode. Set to the center mode set in the Dolby Pro Logic mode.
- Start playing the movie or music.
- Adjust the volume.
- Adjust the level of the center and rear channels. Adjust the levels according to the source, using the Dolby Pro Logic settings as reference.
- Select the delay time mode.
- Set the delay time following the procedure on Page 21.
- Select the effect level mode.
- To increase the effect level.
- To decrease the effect level.
- Follow steps 6 to 8 under "Playing the program source" on Page 14.

• DSP surround playback



- Select the desired surround mode.
- Adjust the effect level. Adjust the level in the same way as for the Wide Screen mode above.
- Follow steps 6 to 8 under "Playing the program source" on Page 14.
- Adjust the volume.
- Adjust the level of the rear channel. Adjust the level according to the source, using the Dolby Pro Logic settings as reference.
- Adjust the effect level. Adjust the level in the same way as for the Wide Screen mode above.
- Follow steps 6 to 8 under "Playing the program source" on Page 14.
- To turn off the surround mode.
- Press the BYPASS button.



■ Using the Personal Memory

Surround mode settings and the input function can be stored at personal memory buttons "1" and "2", then recalled directly from any surround mode simply by pressing button "1" or "2".


① Storing the setting in the personal memory

- Set the desired surround mode and input function.
- Press the personal memory button.

(The memory setting mode is set and the indicator on the MFD flashes.)
- Press the desired personal memory button ("1" or "2").

- "M 1 (2) SET" appears on the MFD indicating that the setting has been stored.

NOTE:

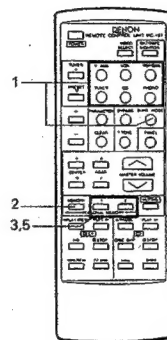
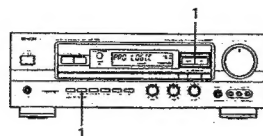
- The memory setting mode is set for 6 seconds. If any button other than personal memory button "1" or "2" is pressed, the memory setting mode is cancelled.

② Recalling the personal memory

- Press the personal memory button ("1" or "2") at which the desired setting was stored.

- The surround mode and input function switch automatically.

NOTES:

- Personal memory buttons "1" and "2" will not function during the tape monitor mode.
- The surround mode recalled with the PERSONAL MEMORY "1" or "2" button is the same as the mode selected with the surround mode button. Thus, if the parameters of the surround mode which was stored in the memory are cleared, when the mode is recalled it is set to the initial values.
- Upon shipment from the factory, the "WIDE SCREEN" mode is stored at personal memory "1", the "LIVE" mode at personal memory "2". The input function is set to VDP/DBS for both "1" and "2".
- Do not to press personal memory buttons "1" or "2" buttons during recording on the cassette deck.



■ Operations Possible in the Various Surround Modes

The following is a list of the buttons and functions which can be operated during the different surround modes. Figures in parentheses indicate adjustment ranges.

	OUTPUT	CENTER LEVEL	REAR LEVEL	CENTER MODE	3CH LOGIC	TEST TONE	DELAY TIME
BYPASS	○	×	×	△ ¹	×	×	×
DOLBY PRO LOGIC	NORMAL	○ (0~24dB)	○ (0~24dB)	○	○	○	○ (15~30ms)
	PHANTOM	○	×	○ (0~24dB)	○	×	○ (15~30ms)
	WIDE	○ (0~24dB)	○ (0~24dB)	○	○	○	○ (15~30ms)
DOLBY 3CH LOGIC	NORMAL	○ (0~24dB)	×	○	○	○	×
	WIDE	○ (0~24dB)	×	○	○	○	×
WIDE SCREEN &	NORMAL	○ (0~24dB)	○ (0~24dB)	○	×	×	○ (6~30ms)
	PHANTOM	○	×	○ (0~24dB)	○	×	○ (6~30ms)
LIVE	WIDE	○ (0~24dB)	○ (0~24dB)	○	×	×	○ (6~30ms)
MONO MOVIE	○	×	○ (0~24dB)	△ ¹	×	×	×
CLASSIC CONCERT	○	×	○ (0~24dB)	△ ¹	×	×	×
ROCK CONCERT	○	×	○ (0~24dB)	△ ¹	×	×	×
STADIUM	○	×	○ (0~24dB)	△ ¹	×	×	×

	EFFECT LEVEL	CLEAR	PERSONAL ²	DAT/TAPE MONITOR
			"MEMORY"	"1" & "2"
BYPASS	×	○	×	○
DOLBY PRO LOGIC	NORMAL	×	○	○
	PHANTOM	×	○	○
	WIDE	×	○	○
DOLBY 3CH LOGIC	NORMAL	×	○	○
	WIDE	×	○	○
WIDE SCREEN &	NORMAL	○ (5~15)	○	○
	PHANTOM	○ (5~15)	○	○
LIVE	○ (5~15)	○	○	○
MONO MOVIE	○ (5~15)	○	○	○
CLASSIC CONCERT	○ (5~15)	○	○	○
ROCK CONCERT	○ (5~15)	○	○	○
STADIUM	○ (5~15)	○	○	○

○: Operation possible
×: Operation not possible

- ¹ Switches to the Dolby Pro (3CH) Logic mode for any modes other than Dolby Pro (3CH) Logic, Wide Screen and LIVE.
² Personal memory buttons MEMORY "1" and "2" will not function during the DAT/tape monitor mode.

- The sound may be distorted for some sources if the rear level or effect level is raised during surround playback. If this happens, lower the rear level and effect level.

⑫ LAST FUNCTION MEMORY

- This amplifier is equipped with a last function memory which stores the input and output setting conditions as they were immediately before the power is switched off. This function eliminates the need to perform complicated resettings when the power is switched on.
- This amplifier is also equipped with a back-up memory. This function provides approximately one week of memory storage with the power cord disconnected.

13 TROUBLESHOOTING

If a problem should arise, first check the following:

1. Are the connections correct?
2. Have you operated the amplifier according to the Operating Instructions?
3. Are the speakers, turntable, and other components operating properly?

If the amplifier is not operating properly, check the items listed in the table below. Should the problem persist, there may be a malfunction. Disconnect the power immediately and contact your store of purchase.

	Symptom	Cause	Measures	Page
Common problems arising when listening to the CD, records, tapes, etc.	MFD not lit and sound not produced when power switch set to on.	• Power cord not plugged in securely.	• Check the insertion of the power cord plug.	8
	MFD lit but sound not produced.	• Speaker cords not securely connected. • OUTPUT button is off. • Improper position of the audio function button. • Volume control set to minimum. • MUTEING is on.	• Connect securely. • Press the OUTPUT button. • Set to a suitable position. • Turn volume up to suitable level. • Switch off MUTEING.	10, 11 17 14 14 15
	PROTECT—display appears multi-function display.	• Speaker terminals are short-circuited. • Block the ventilation holes of the set.	• Switch power off, connect speakers properly, then switch power back on. • Turn off the set's power, then ventilate it well to cool it down. Once the set is cooled down, turn the power back on.	10, 11 3, 4
		• The unit is operating at continuous high power conditions and/or inadequate ventilation.	• Turn off the set's power, then ventilate it well to cool it down. Once the set is cooled down, turn the power back on.	3, 4
	Sound produced only from one channel.	• Incomplete connection of speaker cords. • Incomplete connection of input/output cords. • Left/right balance is off.	• Connect securely. • Connect securely. • Adjust balance knob properly.	10, 11 12, 13 14
	Positions of instruments reversed during stereo playback.	• Reverse connections of left and right speakers or left and right input/output cords.	• Check left and right connections.	12, 13
	Sound seems distorted.	• Effect level parameter is high. • Rear level is too high.	• Set the effect level parameter to lower level. • Set the rear level to lower level.	22, 23 22, 23
	Sound seems strange.	• DSP parameter settings are poor.	• Press the CLEAR button then adjust the DSP parameters.	22, 23, 27
	Personal memory function does not work.	• DAT/tape monitor mode set.	• Press the DAT/TAPE button to set the source.	16
	Humming noise produced when record is playing.	• Ground wire of turntable not connected properly. • Incomplete PHONO jack connection. • TV or radio transmission antenna nearby.	• Connect securely. • Connect securely. • Contact your store of purchase.	12 12 —
When playing records	Howling noise produced when volume is high.	• Turntable and speaker systems too close together. • Floor is unstable and vibrates easily.	• Separate as much as possible. • Use cushions to absorb speaker vibrations transmitted by floor. If turntable is not equipped with insulators, use audio insulators (commonly available).	— —
	Sound is distorted.	• Stylus pressure too weak. • Dust or dirt on stylus. • Cartridge defective.	• Apply proper stylus pressure. • Check stylus. • Replace cartridge.	— — —
	Volume is weak.	• MC cartridge being used.	• Replace with MM cartridge or use a head amplifier or step-up transformer.	12
	Amplifier does not operate properly when remote control unit is used.	• Batteries dead. • Remote control unit too far from amplifier. • Obstacle between amplifier and remote control unit. • Different button is being pressed. • + and - ends of battery inserted in reverse.	• Replace with new batteries. • Move closer. • Remove obstacle. • Press the proper button. • Insert batteries properly.	6 6 6 6 6

14 INITIALIZATION OF THE MICROPROCESSOR

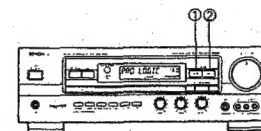
When the indication of the MFD display is not normal or when the operation of the unit does not show the reasonable result, the initialization of the microprocessor is required by the following procedure.

1. Switch off the unit and remove the AC power cord from the wall outlet.
2. Hold the following 2 buttons of the main unit at the same time (as illustrated in the diagram below, ① AUDIO FUNCTION button, ② VIDEO FUNCTION button, and plug the power cord into the outlet.

3. Check that the entire MFD display is flashing with an interval of about 1 second, and release your fingers from the 2 buttons.
4. Switch on the unit and the microprocessor will be initialized. The input function is set to tuner with the bypass mode automatically.

NOTE:

- When the unit does not show the result of above 3 and 4, repeat the procedure from 1 again.
- When the microprocessor is initialized, all settings you have made are reset to the factory presettings.



Initial parameter values for the different modes

	OUTPUT	FRONT SP	CENTER SP/PRE	REAR SP	CENTER LEVEL	REAR LEVEL	CENTER MODE	3CH LOGIC	TEST TONE	DELAY TIME	EFFECT LEVEL
BYPASS	ON	ON	OFF	OFF	—	—	—	—	—	—	—
DOLBY PRO LOGIC	ON	ON	ON	ON	-12dB	-12dB	NORMAL	OFF	OFF	21msec	—
WIDE SCREEN	ON	ON	ON	ON	-12dB	-12dB	NORMAL	—	—	21msec	10
LIVE	ON	ON	ON	ON	-12dB	-12dB	NORMAL	—	—	21msec	10
MONO MOVIE	ON	ON	OFF	ON	—	-12dB	—	—	—	—	10
CLASSIC	ON	ON	OFF	ON	—	-12dB	—	—	—	—	10
ROCK	ON	ON	OFF	ON	—	-12dB	—	—	—	—	10
STADIUM	ON	ON	OFF	ON	—	-12dB	—	—	—	—	10

SP: SPEAKER OUT
PRE: PRE OUT

- INPUT FUNCTION : TUNER
- PERSONAL MEMORY 1
INPUT : VDP/DBS
SURROUND MODE : WIDE SCREEN
- PERSONAL MEMORY 2
INPUT : VDP/DBS
SURROUND MODE : LIVE

Initialization of the Individual Modes

Use this to set the adjusted values back to the factory preset values.

1. Press the CLEAR button.



The values for the currently selected mode only are reset to the values shown on the above table.

